



SEQUENCE LISTING

B28

<110> Morris, Peter
Stiefel, Thomas
Voelter, Wolfgang
Welters, Peter

<120> Recombinant Mistletoe Lectins

<130> 29841/36636

<140> 09/601,667
<141> 2000-10-06

<150> PCT/EP99/00696
<151> 1999-02-03

<150> D 198 04 210.8
<151> 1998-02-03

<160> 39

<210> 1
<211> 533
<212> PRT
<213> Artificial

<220>
<223> mistletoe lectin

<220>
<221> SITE
<222> 15
<223> product= "Xaa is Asp or Glu"
/label= Xaa1

<220>
<221> SITE
<222> 63
<223> product= "Xaa is Gly or Gln"
/label= Xaa2

<220>
<221> SITE
<222> 66
<223> product= "Xaa is Ile or Val"
/label= Xaa3

<220>
<221> SITE
<222> 75
<223> product= "Xaa is Leu or Ala"
/label= Xaa4

<220>
<221> SITE
<222> 107
<223> product= "Xaa is Asp-Arg or
missing"

RECEIVED
MAR 22 2002
TECH CENTER 1600/2900

B34

```

/label= Xaa5

<220>
<221> SITE
<222> 113
<223> product= "Xaa is Asn or Thr"
      /label= Xaa6

<220>
<221> SITE
<222> 117
<223> product= "Xaa is Pro or Thr"
      /label= Xaa7

<220>
<221> SITE
<222> 134
<223> product= "Xaa is Asp or Glu"
      /label= Xaa8

<220>
<221> SITE
<222> 141
<223> product= "Xaa is Ser or Thr"
      /label= Xaa9

<220>
<221> SITE
<222> 145
<223> product= "Xaa is Phe or Tyr"
      /label= Xaa10

<220>
<221> SITE
<222> 152
<223> product= "Xaa is Thr or Ala"
      /label= Xaa11

<220>
<221> SITE
<222> 177
<223> product= "Xaa is Ala or Tyr"
      /label= Xaa12

<220>
<221> SITE
<222> 180
<223> product= "Xaa is Tyr or Asp"
      /label= Xaa13

<220>
<221> SITE
<222> 185
<223> product= "Xaa is Ala or Glu"
      /label= Xaa14

<220>
<221> SITE
<222> 191
<223> product= "Xaa is Val or Met"
      /label= Xaa15

<220>

```

<221> SITE
<222> 219
<223> product= "Xaa is Ile or Phe"
/label= Xaa16

B28
<220>
<221> SITE
<222> 224
<223> product= "Xaa is Pro or Ser"
/label= Xaa17

<220>
<221> SITE
<222> 225
<223> product= "Xaa is Pro or Thr"
/label= Xaa18

<220>
<221> SITE
<222> 232
<223> product= "Xaa is Thr or Ser"
/label= Xaa19

<220>
<221> SITE
<222> 236
<223> product= "Xaa is Asp or Ser"
/label= Xaa20

<220>
<221> SITE
<222> 287
<223> product= "Xaa is Asn or Ser"
/label= Xaa21

<220>
<221> SITE
<222> 290
<223> product= "Xaa is Cys or Arg"
/label= Xaa22

<220>
<221> SITE
<222> 325
<223> product= "Xaa is Gly or Asn"
/label= Xaa23

<220>
<221> SITE
<222> 364
<223> product= "Xaa is Gly or Asp"
/label= Xaa24

<220>
<221> SITE
<222> 426
<223> product= "Xaa is Gly or Gln"
/label= Xaa25

<220>
<221> SITE
<222> 435
<223> product= "Xaa is Val or Asp"

/label= Xaa26

<220>
<221>
<222>
<223>

SITE
439
product= "Xaa is Gln or Lys"
/label= Xaa27

B28
<220>
<221>
<222>
<223>

SITE
442
product= "Xaa is Gly or missing"
/label= Xaa28

<220>
<221>
<222>
<223>

SITE
443
product= "Xaa is Arg or Lys"
/label= Xaa29

<220>
<221>
<222>
<223>

SITE
464
product= "Xaa is Cys or Ser or Val"
/label= Xaa30

<220>
<221>
<222>
<223>

SITE
480
product= "Xaa is Ala or Gly"
/label= Xaa

<220>
<221>
<222>
<223>

SITE
481
product= "Xaa is Gly or Ala"
/label= Xaa32

<220>
<221>
<222>
<223>

SITE
483
product= "Xaa is Ser or Gly"
/label= Xaa33

<220>
<221>
<222>
<223>

SITE
484
product= "Xaa is Gly or Ser"
/label= Xaa34

<220>
<221>
<222>
<223>

SITE
493
product= "Xaa is Gly or Tyr"
/label= Xaa35

<220>
<221>
<222>
<223>

SITE
500
product= "Xaa is Asn or Ser Thr or Lys"
/label= Xaa36

<220>

<221> SITE
 <222> 501
 <223> product= "Xaa is Ser or Gly"
 /label= Xaa37

<220>
 <221> SITE
 <222> 502
 <223> product= "Xaa is Leu or Pro"
 /label= Xaa38

<220>
 <221> SITE
 <222> 503
 <223> product= "Xaa is Ala or Met"
 /label= Xaa39

<220>
 <221> SITE
 <222> 504
 <223> product= "Xaa is Met or Val"
 /label= Xaa40

<220>
 <221> SITE
 <222> 533
 <223> product= "Xaa is Pro or Phe"
 /label= Xaa41

<400> 1

Tyr	Glu	Arg	Leu	Arg	Leu	Arg	Val	Thr	His	Gln	Thr	Thr	Gly	Xaa	Glu
1			5						10					15	
Tyr	Phe	Arg	Phe	Ile	Thr	Leu	Leu	Arg	Asp	Tyr	Val	Ser	Ser	Gly	Ser
			20					25					30		
Phe	Ser	Asn	Glu	Ile	Pro	Leu	Leu	Arg	Gln	Ser	Thr	Ile	Pro	Val	Ser
		35					40					45			
Asp	Ala	Gln	Arg	Phe	Val	Leu	Val	Glu	Leu	Thr	Asn	Gln	Gly	Xaa	Asp
	50					55					60				
Ser	Xaa	Thr	Ala	Ala	Ile	Asp	Val	Thr	Asn	Xaa	Tyr	Val	Val	Ala	Tyr
65					70					75					80
Gln	Ala	Gly	Asp	Gln	Ser	Tyr	Phe	Leu	Arg	Asp	Ala	Pro	Arg	Gly	Ala
				85					90					95	
Glu	Thr	His	Leu	Phe	Thr	Gly	Thr	Thr	Arg	Xaa	Ser	Ser	Leu	Pro	Phe
			100					105					110		
Xaa	Gly	Ser	Tyr	Xaa	Asp	Leu	Glu	Arg	Tyr	Ala	Gly	His	Arg	Asp	Gln
		115					120					125			
Ile	Pro	Leu	Gly	Ile	Xaa	Gln	Leu	Ile	Gln	Ser	Val	Xaa	Ala	Leu	Arg
	130					135					140				
Xaa	Pro	Gly	Gly	Ser	Thr	Arg	Xaa	Gln	Ala	Arg	Ser	Ile	Leu	Ile	Leu
145						150				155					160

Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg
 165 170 175
 Xaa Arg Gln Xaa Ile Asn Ser Gly Xaa Ser Phe Leu Pro Asp Xaa Tyr
 180 185 190
 Met Leu Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln
 195 200 205
 His Ser Thr Asp Gly Val Phe Asn Asn Pro Xaa Arg Leu Ala Ile Xaa
 210 215 220
 Xaa Gly Asn Phe Val Thr Leu Xaa Asn Val Arg Xaa Val Ile Ala Ser
 225 230 235 240
 Leu Ala Ile Met Leu Phe Val Cys Gly Glu Arg Pro Ser Ser Ser Asp
 245 250 255
 Val Arg Tyr Trp Pro Leu Val Ile Arg Pro Val Ile Ala Asp Asp Val
 260 265 270
 Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly Arg Xaa Gly
 275 280 285
 Met Xaa Val Asp Val Arg Asp Asp Asp Phe His Asp Gly Asn Gln Ile
 290 295 300
 Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln Leu Trp Thr
 305 310 315 320
 Ile Lys Arg Asp Xaa Thr Ile Arg Ser Asn Gly Ser Cys Leu Thr Thr
 325 330 335

 Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp Cys Asn Thr
 340 345 350
 Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Xaa Asn Gly Thr Ile
 355 360 365
 Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser Gly Ile Lys
 370 375 380
 Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu Gly Gln Gly
 385 390 395 400
 Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr Ile Tyr Gly
 405 410 415
 Phe Arg Asp Leu Cys Met Glu Ser Asn Xaa Gly Ser Val Trp Val Glu
 420 425 430
 Thr Cys Xaa Ser Ser Gln Xaa Asn Gln Xaa Xaa Trp Ala Leu Tyr Gly
 435 440 445
 Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys Leu Thr Xaa
 450 455 460
 Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser Cys Ser Xaa
 465 470 475 480
 Xaa Ser Xaa Xaa Gln Arg Trp Val Phe Thr Asn Glu Xaa Ala Ile Leu
 485 490 495

Asn Leu Lys Xaa Xaa Xaa Xaa Xaa Asp Val Ala Gln Ala Asn Pro Lys
500 505 510

Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro Asn Gln Met
515 520 525

Trp Leu Pro Val Xaa
530

<210> 2
<211> 255
<212> PRT
<213> Artificial

<220>
<223> MLA-chain

<220>
<221> SITE
<222> 15
<223> product= "Xaa is Asp or Glu"
/label= Xaa1

<220>
<221> SITE
<222> 63
<223> product= "Xaa is Gly or Gln"
/label= Xaa2

<220>
<221> SITE
<222> 66
<223> product= "Xaa is Ile or Val"
/label= Xaa3

<220>
<221> SITE
<222> 75
<223> product= "Xaa is Leu or Ala"
/label= Xaa4

<220>
<221> SITE
<222> 107
<223> product= "Xaa is Asp-Arg or missing"
/label= Xaa5

<220>
<221> SITE
<222> 113
<223> product= "Xaa is Asn or Thr"
/label= Xaa6

<220>
<221> SITE
<222> 117
<223> product= "Xaa is Pro or Thr"
/label= Xaa7

<220>
<221> SITE

<222> 134
<223> product= "Xaa is Asp or Glu"
/label= Xaa8

<220>
<221> SITE
<222> 141
<223> product= "Xaa is Ser or Thr"
/label= Xaa9

<220>
<221> SITE
<222> 145
<223> product= "Xaa is Phe or Tyr"
/label= Xaa10

<220>
<221> SITE
<222> 152
<223> product= "Xaa is Thr or Ala"
/label= Xaa11

<220>
<221> SITE
<222> 177
<223> product= "Xaa is Ala or Tyr"
/label= Xaa12

<220>
<221> SITE
<222> 180
<223> product= "Xaa is Tyr or Asp"
/label= Xaa13

<220>
<221> SITE
<222> 185
<223> product= "Xaa is Ala or Glu"
/label= Xaa14

<220>
<221> SITE
<222> 191
<223> product= "Xaa is Val or Met"
/label= Xaa15

<220>
<221> SITE
<222> 219
<223> product= "Xaa is Ile or Phe"
/label= Xaa16

<220>
<221> SITE
<222> 224
<223> product= "Xaa is Pro or Ser"
/label= Xaa17

<220>
<221> SITE
<222> 225
<223> product= "Xaa is Pro or Thr"
/label= Xaa18

<220>
 <221> SITE
 <222> 232
 <223> product= "Xaa is Thr or Ser"
 /label= Xaa19

<220>
 <221> SITE
 <222> 236
 <223> product= "Xaa is Asp or Ser"
 /label= Xaa20

<400> 2

Tyr	Glu	Arg	Leu	Arg	Leu	Arg	Val	Thr	His	Gln	Thr	Thr	Gly	Xaa	Glu
1			5						10					15	
Tyr	Phe	Arg	Phe	Ile	Thr	Leu	Leu	Arg	Asp	Tyr	Val	Ser	Ser	Gly	Ser
			20					25					30		
Phe	Ser	Asn	Glu	Ile	Pro	Leu	Leu	Arg	Gln	Ser	Thr	Ile	Pro	Val	Ser
		35					40					45			
Asp	Ala	Gln	Arg	Phe	Val	Leu	Val	Glu	Leu	Thr	Asn	Gln	Gly	Xaa	Asp
	50					55					60				
Ser	Xaa	Thr	Ala	Ala	Ile	Asp	Val	Thr	Asn	Xaa	Tyr	Val	Val	Ala	Tyr
65					70				75						80
Gln	Ala	Gly	Asp	Gln	Ser	Tyr	Phe	Leu	Arg	Asp	Ala	Pro	Arg	Gly	Ala
				85					90					95	
Glu	Thr	His	Leu	Phe	Thr	Gly	Thr	Thr	Arg	Xaa	Ser	Ser	Leu	Pro	Phe
			100					105					110		
Xaa	Gly	Ser	Tyr	Xaa	Asp	Leu	Glu	Arg	Tyr	Ala	Gly	His	Arg	Asp	Gln
		115					120					125			
Ile	Pro	Leu	Gly	Ile	Xaa	Gln	Leu	Ile	Gln	Ser	Val	Xaa	Ala	Leu	Arg
	130					135					140				
Xaa	Pro	Gly	Gly	Ser	Thr	Arg	Xaa	Gln	Ala	Arg	Ser	Ile	Leu	Ile	Leu
145					150					155					160
Ile	Gln	Met	Ile	Ser	Glu	Ala	Ala	Arg	Phe	Asn	Pro	Ile	Leu	Trp	Arg
				165					170					175	
Xaa	Arg	Gln	Xaa	Ile	Asn	Ser	Gly	Xaa	Ser	Phe	Leu	Pro	Asp	Xaa	Tyr
			180					185					190		
Met	Leu	Glu	Leu	Glu	Thr	Ser	Trp	Gly	Gln	Gln	Ser	Thr	Gln	Val	Gln
	195						200					205			
His	Ser	Thr	Asp	Gly	Val	Phe	Asn	Asn	Pro	Xaa	Arg	Leu	Ala	Ile	Xaa
	210					215					220				
Xaa	Gly	Asn	Phe	Val	Thr	Leu	Xaa	Asn	Val	Arg	Xaa	Val	Ile	Ala	Ser
225				230						235					240
Leu	Ala	Ile	Met	Leu	Phe	Val	Cys	Gly	Glu	Arg	Pro	Ser	Ser	Ser	
			245						250					255	

<210> 3
<211> 264
<212> PRT
<213> Artificial

<220>

<223> MLB-chain

<220>
<221> SITE
<222> 18
<223> product= "Xaa is Asn or Ser"
/label= Xaa1

<220>
<221> SITE
<222> 21
<223> product= "Xaa is Cys or Arg"
/label= X2

<220>
<221> SITE
<222> 56
<223> product= "Xaa is Gly or Asn"
/label= Xaa3

<220>
<221> SITE
<222> 95
<223> product= "Xaa is Gly or Asp"
/label= Xaa4

<220>
<221> SITE
<222> 157
<223> product= "Xaa is Gly or Gln"
/label= Xaa5

<220>
<221> SITE
<222> 166
<223> product= "Xaa is Val or Asp"
/label= Xaa6

<220>
<221> SITE
<222> 170
<223> product= "Xaa is Gln or Lys"
/label= Xaa7

<220>
<221> SITE
<222> 173
<223> product= "Xaa is Gly or missing"
/label= Xaa8

<220>
<221> SITE
<222> 174
<223> product= "Xaa is Arg or Lys"

```

        /label= Xaa9

<220>
<221>      SITE
<222>      195
<223>      product= "Xaa is Cys or Ser or Val"
              /label= Xaa10

<220>
<221>      SITE
<222>      211
<223>      product= "Xaa is Ala or Gly"
              /label= Xaa11

<220>
<221>      SITE
<222>      212
<223>      product= "Xaa is Gly or Ala"
              /label= Xaa12

<220>
<221>      SITE
<222>      214
<223>      product= "Xaa is Ser or Gly"
              /label= Xaa13

<220>
<221>      SITE
<222>      215
<223>      product= "Xaa is Gly or Ser"
              /label= Xaa14

<220>
<221>      SITE
<222>      224
<223>      product= "Xaa is Gly or Tyr"
              /label= Xaa15

<220>
<221>      SITE
<222>      231
<223>      product= "Xaa is Asn or Ser or Thr or Lys"
              /label= Xaa16

<220>
<221>      SITE
<222>      232
<223>      product= "Xaa is Ser or Gly"
              /label= Xaa17

<220>
<221>      SITE
<222>      233
<223>      product= "Xaa is Leu or Pro"
              /label= Xaa17

<220>
<221>      SITE
<222>      234
<223>      product= "Xaa is Ala or Met"
              /label= Xaa19

<220>

```

<221> SITE
 <222> 235
 <223> product= "Xaa is Met or Val"
 /label= Xaa20

<220>
 <221> SITE
 <222> 264
 <223> product= "Xaa is Pro or Phe"
 /label= Xaa21

<400> 3

Asp	Asp	Val	Thr	Cys	Ser	Ala	Ser	Glu	Pro	Thr	Val	Arg	Ile	Val	Gly
1				5					10					15	
Arg	Xaa	Gly	Met	Xaa	Val	Asp	Val	Arg	Asp	Asp	Asp	Phe	His	Asp	Gly
			20					25					30		
Asn	Gln	Ile	Gln	Leu	Trp	Pro	Ser	Lys	Ser	Asn	Asn	Asp	Pro	Asn	Gln
		35					40					45			
Leu	Trp	Thr	Ile	Lys	Arg	Asp	Xaa	Thr	Ile	Arg	Ser	Asn	Gly	Ser	Cys
	50					55					60				
Leu	Thr	Thr	Tyr	Gly	Tyr	Thr	Ala	Gly	Val	Tyr	Val	Met	Ile	Phe	Asp
65					70					75					80
Cys	Asn	Thr	Ala	Val	Arg	Glu	Ala	Thr	Ile	Trp	Gln	Ile	Trp	Xaa	Asn
				85					90					95	
Gly	Thr	Ile	Ile	Asn	Pro	Arg	Ser	Asn	Leu	Val	Leu	Ala	Ala	Ser	Ser
			100					105					110		
Gly	Ile	Lys	Gly	Thr	Thr	Leu	Thr	Val	Gln	Thr	Leu	Asp	Tyr	Thr	Leu
		115					120					125			
Gly	Gln	Gly	Trp	Leu	Ala	Gly	Asn	Asp	Thr	Ala	Pro	Arg	Glu	Val	Thr
	130					135					140				
Ile	Tyr	Gly	Phe	Arg	Asp	Leu	Cys	Met	Glu	Ser	Asn	Xaa	Gly	Ser	Val
145					150					155					160
Trp	Val	Glu	Thr	Cys	Xaa	Ser	Ser	Gln	Xaa	Asn	Gln	Xaa	Xaa	Trp	Ala
				165					170					175	
Leu	Tyr	Gly	Asp	Gly	Ser	Ile	Arg	Pro	Lys	Gln	Asn	Gln	Asp	Gln	Cys
			180					185					190		
Leu	Thr	Xaa	Gly	Arg	Asp	Ser	Val	Ser	Thr	Val	Ile	Asn	Ile	Val	Ser
		195						200				205			
Cys	Ser	Xaa	Xaa	Ser	Xaa	Xaa	Gln	Arg	Trp	Val	Phe	Thr	Asn	Glu	Xaa
	210					215					220				
Ala	Ile	Leu	Asn	Leu	Lys	Xaa	Xaa	Xaa	Xaa	Xaa	Asp	Val	Ala	Gln	Ala
225					230					235					240
Asn	Pro	Lys	Leu	Arg	Arg	Ile	Ile	Ile	Tyr	Pro	Ala	Thr	Gly	Lys	Pro
				245					250					255	
Asn	Gln	Met	Trp	Leu	Pro	Val	Xaa								
				260											

<210> 4
 <211> 531
 <212> PRT
 <213> Artificial

<220>
 <223> MLI match

<400> 4

Tyr	Glu	Arg	Leu	Arg	Leu	Arg	Val	Thr	His	Gln	Thr	Thr	Gly	Glu	Glu	1	5	10	15
Tyr	Phe	Arg	Phe	Ile	Thr	Leu	Leu	Arg	Asp	Tyr	Val	Ser	Ser	Gly	Ser	20	25	30	
Phe	Ser	Asn	Glu	Ile	Pro	Leu	Leu	Arg	Gln	Ser	Thr	Ile	Pro	Val	Ser	35	40	45	
Asp	Ala	Gln	Arg	Phe	Val	Leu	Val	Glu	Leu	Thr	Asn	Gln	Gly	Gly	Asp	50	55	60	
Ser	Ile	Thr	Ala	Ala	Ile	Asp	Val	Thr	Asn	Leu	Tyr	Val	Val	Ala	Tyr	65	70	75	80
Gln	Ala	Gly	Asp	Gln	Ser	Tyr	Phe	Leu	Arg	Asp	Ala	Pro	Arg	Gly	Ala	85	90	95	
Glu	Thr	His	Leu	Phe	Thr	Gly	Thr	Thr	Arg	Ser	Ser	Leu	Pro	Phe	Asn	100	105	110	
Gly	Ser	Tyr	Pro	Asp	Leu	Glu	Arg	Tyr	Ala	Gly	His	Arg	Asp	Gln	Ile	115	120	125	
Pro	Leu	Gly	Ile	Asp	Gln	Leu	Ile	Gln	Ser	Val	Thr	Ala	Leu	Arg	Phe	130	135	140	
Pro	Gly	Gly	Ser	Thr	Arg	Thr	Gln	Ala	Arg	Ser	Ile	Leu	Ile	Leu	Ile	145	150	155	160
Gln	Met	Ile	Ser	Glu	Ala	Ala	Arg	Phe	Asn	Pro	Ile	Leu	Trp	Arg	Ala	165	170	175	
Arg	Gln	Tyr	Ile	Asn	Ser	Gly	Ala	Ser	Phe	Leu	Pro	Asp	Val	Tyr	Met	180	185	190	
Leu	Glu	Leu	Glu	Thr	Ser	Trp	Gly	Gln	Gln	Ser	Thr	Gln	Val	Gln	His	195	200	205	
Ser	Thr	Asp	Gly	Val	Phe	Asn	Asn	Pro	Ile	Arg	Leu	Ala	Ile	Pro	Pro	210	215	220	
Gly	Asn	Phe	Val	Thr	Leu	Thr	Asn	Val	Arg	Asp	Val	Ile	Ala	Ser	Leu	225	230	235	240
Ala	Ile	Met	Leu	Phe	Val	Cys	Gly	Glu	Arg	Pro	Ser	Ser	Ser	Asp	Val	245	250	255	
Arg	Tyr	Trp	Pro	Leu	Val	Ile	Arg	Pro	Val	Ile	Ala	Asp	Asp	Val	Thr	260	265	270	
Cys	Ser	Ala	Ser	Glu	Pro	Thr	Val	Arg	Ile	Val	Gly	Arg	Asn	Gly	Met	275	280	285	

Cys Val Asp Val Arg Asp Asp Asp Phe His Asp Gly Asn Gln Ile Gln
290 295 300

Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln Leu Trp Thr Ile
305 310 315 320

Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys Leu Thr Thr Tyr
325 330 335

Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp Cys Asn Thr Ala
340 345 350

Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Gly Asn Gly Thr Ile Ile
355 360 365

Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser Gly Ile Lys Gly
370 375 380

Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu Gly Gln Gly Trp
385 390 395 400

Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr Ile Tyr Gly Phe
405 410 415

Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val Trp Val Glu Thr
420 425 430

Cys Val Ser Ser Gln Gln Asn Gln Arg Trp Ala Leu Tyr Gly Asp Gly
435 440 445

Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys Leu Thr Cys Gly Arg
450 455 460

Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser Cys Ser Ala Gly Ser
465 470 475 480

Ser Gly Gln Arg Trp Val Phe Thr Asn Glu Gly Ala Ile Leu Asn Leu
485 490 495

Lys Asn Gly Leu Ala Met Asp Val Ala Gln Ala Asn Pro Lys Leu Arg
500 505 510

Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro Asn Gln Met Trp Leu
515 520 525

Pro Val Pro
530

<210> 5
<211> 256
<212> PRT
<213> Artificial

<220>
<223> Lectin A2

<400> 5

Tyr Glu Arg Leu Arg Leu Arg Val Thr His Gln Thr Thr Gly Asp Glu
1 5 10 15

Tyr Phe Arg Phe Ile Thr Leu Leu Arg Asp Tyr Val Ser Ser Gly Ser
20 25 30

Phe Ser Asn Glu Ile Pro Leu Leu Arg Gln Ser Thr Ile Pro Val Ser
 35 40 45
 Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gln Asp
 50 55 60
 Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Ala Tyr Val Val Ala Tyr
 65 70 75 80
 Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly Ala
 85 90 95
 Glu Thr His Leu Phe Thr Gly Thr Thr Arg Asp Arg Ser Ser Leu Pro
 100 105 110
 Phe Thr Gly Ser Tyr Thr Asp Leu Glu Arg Tyr Ala Gly His Arg Asp
 115 120 125
 Gln Ile Pro Leu Gly Ile Glu Gln Leu Ile Gln Ser Val Ser Ala Leu
 130 135 140
 Arg Tyr Pro Gly Gly Ser Thr Arg Ala Gln Ala Arg Ser Ile Leu Ile
 145 150 155 160
 Leu Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp
 165 170 175
 Arg Tyr Arg Gln Asp Ile Asn Ser Gly Glu Ser Phe Leu Pro Asp Met
 180 185 190
 Tyr Met Leu Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val
 195 200 205
 Gln His Ser Thr Asp Gly Val Phe Asn Asn Pro Phe Arg Leu Ala Ile
 210 215 220
 Ser Thr Gly Asn Phe Val Thr Leu Ser Asn Val Arg Ser Val Ile Ala
 225 230 235 240
 Ser Leu Ala Ile Met Leu Phe Val Cys Gly Glu Arg Pro Ser Ser Ser
 245 250 255

<210> 6
 <211> 263
 <212> PRT
 <213> Artificial
 <220>
 <223> mistletoe lectin B
 <400> 6

Asp Asp Val Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly
 1 5 10 15
 Arg Asn Gly Met Cys Val Asp Val Arg Asp Asp Asp Phe His Asp Gly
 20 25 30
 Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
 35 40 45

Leu Trp Thr Ile Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys
50 55 60

Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
65 70 75 80

Cys Asn Thr Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Gly Asn
85 90 95

Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
100 105 110

Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
115 120 125

Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
130 135 140

Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val
145 150 155 160

Trp Val Glu Thr Cys Val Ser Ser Gln Gln Asn Gln Arg Trp Ala Leu
165 170 175

Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys Leu
180 185 190

Thr Cys Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser Cys
195 200 205

Ser Ala Gly Ser Ser Gly Gln Arg Trp Val Phe Thr Asn Glu Gly Ala
210 215 220

Ile Leu Asn Leu Lys Asn Gly Leu Ala Met Asp Val Ala Gln Ala Asn
225 230 235 240

Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro Asn
245 250 255

Gln Met Trp Leu Pro Val Pro
260

<210> 7
<211> 264
<212> PRT
<213> Artificial

<220>
<223> mistletoe lectin 1 (match)

<400> 7

Asp Asp Val Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly
1 5 10 15

Arg Asn Gly Met Arg Val Asp Val Arg Asp Asp Asp Phe His Asp Gly
20 25 30

Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
35 40 45

Leu Trp Thr Ile Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys
 50 55 60
 Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
 65 70 75 80
 Cys Asn Thr Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Asp Asn
 85 90 95
 Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
 100 105 110
 Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
 115 120 125
 Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
 130 135 140
 Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val
 145 150 155 160
 Trp Val Glu Thr Cys Asp Ser Ser Gln Lys Asn Gln Gly Lys Trp Ala
 165 170 175
 Leu Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys
 180 185 190
 Leu Thr Ser Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser
 195 200 205
 Cys Ser Gly Ala Ser Gly Ser Gln Arg Trp Val Phe Thr Asn Glu Gly
 210 215 220
 Ala Ile Leu Asn Leu Lys Asn Gly Leu Ala Met Asp Val Ala Gln Ala
 225 230 235 240
 Asn Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro
 245 250 255
 Asn Gln Met Trp Leu Pro Val Phe
 260

<210> 8
 <211> 264
 <212> PRT
 <213> Artificial
 <220>
 <223> mistletoe lectin B2 (match)
 <400> 8

Asp Asp Val Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly
 1 5 10 15
 Arg Ser Gly Met Arg Val Asp Val Arg Asp Asp Asp Phe His Asp Gly
 20 25 30
 Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
 35 40 45
 Leu Trp Thr Ile Lys Arg Asp Asn Thr Ile Arg Ser Asn Gly Ser Cys
 50 55 60

Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
 65 70 75 80
 Cys Asn Thr Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Asp Asn
 85 90 95
 Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
 100 105 110
 Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
 115 120 125
 Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
 130 135 140
 Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gln Gly Ser Val
 145 150 155 160
 Trp Val Glu Thr Cys Asp Ser Ser Gln Lys Asn Gln Gly Lys Trp Ala
 165 170 175
 Leu Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys
 180 185 190
 Leu Thr Val Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser
 195 200 205
 Cys Ser Gly Ala Ser Gly Ser Gln Arg Trp Val Phe Thr Asn Glu Tyr
 210 215 220
 Ala Ile Leu Asn Leu Lys Ser Gly Leu Ala Met Asp Val Ala Gln Ala
 225 230 235 240
 Asn Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro
 245 250 255

Asn Gln Met Trp Leu Pro Val Phe
 260

<210> 9
 <211> 264
 <212> PRT
 <213> Artificial
 <220>
 <223> mistletoe lectin B3 (match)
 <400> 9

Asp Asp Val Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly
 1 5 10 15
 Arg Asn Gly Met Arg Val Asp Val Arg Asp Asp Asp Phe His Asp Gly
 20 25 30
 Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
 35 40 45
 Leu Trp Thr Ile Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys
 50 55 60
 Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
 65 70 75 80

Cys Asn Thr Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Asp Asn
 85 90 95
 Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
 100 105 110
 Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
 115 120 125
 Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
 130 135 140
 Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val
 145 150 155 160
 Trp Val Glu Thr Cys Asp Ser Ser Gln Lys Asn Gln Gly Lys Trp Ala
 165 170 175
 Leu Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys
 180 185 190
 Leu Thr Ser Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser
 195 200 205
 Cys Ser Gly Ala Ser Gly Ser Gln Arg Trp Val Phe Thr Asn Glu Gly
 210 215 220
 Ala Ile Leu Asn Leu Lys Thr Gly Leu Ala Met Asp Val Ala Gln Ala
 225 230 235 240
 Asn Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro
 245 250 255

Asn Gln Met Trp Leu Pro Val Phe
 260

<210> 10
 <211> 264
 <212> PRT
 <213> Artificial

<220>
 <223> mistletoe lectin B4 (match)
 <400> 10

Asp Asp Val Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly
 1 5 10 15
 Arg Asn Gly Met Arg Val Asp Val Arg Asp Asp Asp Phe His Asp Gly
 20 25 30
 Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
 35 40 45
 Leu Trp Thr Ile Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys
 50 55 60
 Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
 65 70 75 80

Cys Asn Thr Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Asp Asn
 85 90 95
 Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
 100 105 110
 Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
 115 120 125
 Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
 130 135 140
 Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val
 145 150 155 160
 Trp Val Glu Thr Cys Asp Ser Ser Gln Lys Asn Gln Gly Lys Trp Ala
 165 170 175
 Leu Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys
 180 185 190
 Leu Thr Ser Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser
 195 200 205
 Cys Ser Gly Ala Ser Gly Ser Gln Arg Trp Val Phe Thr Asn Glu Gly
 210 215 220
 Ala Ile Leu Asn Leu Lys Lys Gly Pro Ala Met Asp Val Ala Gln Ala
 225 230 235 240
 Asn Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro
 245 250 255
 Asn Gln Met Trp Leu Pro Val Phe
 260

<210> 11
 <211> 264
 <212> PRT
 <213> Artificial
 <220>
 <223> mistletoe lectin B5 (match)
 <400> 11

Asp Asp Val Thr Cys Ser Ala Ser Glu Pro Thr Val Arg Ile Val Gly
 1 5 10 15
 Arg Asn Gly Met Arg Val Asp Val Arg Asp Asp Asp Phe His Asp Gly
 20 25 30
 Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
 35 40 45
 Leu Trp Thr Ile Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys
 50 55 60
 Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
 65 70 75 80
 Cys Asn Thr Ala Val Arg Glu Ala Thr Ile Trp Gln Ile Trp Asp Asn
 85 90 95

Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
 100 105 110
 Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
 115 120 125
 Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
 130 135 140
 Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val
 145 150 155 160
 Trp Val Glu Thr Cys Asp Ser Ser Gln Lys Asn Gln Gly Lys Trp Ala
 165 170 175
 Leu Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys
 180 185 190
 Leu Thr Ser Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser
 195 200 205
 Cys Ser Gly Ala Ser Gly Ser Gln Arg Trp Val Phe Thr Asn Glu Gly
 210 215 220
 Ala Ile Leu Asn Leu Lys Asn Ser Leu Met Val Asp Val Ala Gln Ala
 225 230 235 240
 Asn Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro
 245 250 255
 Asn Gln Met Trp Leu Pro Val Phe
 260

<210> 12
 <211> 1598
 <212> DNA
 <213> Artificial

 <220>
 <223> ML-I

 <220>
 <221> misc_feature
 <222> 319
 <223> product= "n is gat aga or missing"
 /label= Z1

 <220>
 <221> misc_feature
 <222> 1322
 <223> product= "n is ggc or missing"
 /label= Z2

<400> 12
 tacgagaggc taagactcag agttacgcat caaaccacgg gcgakgaata cttccggttc 60
 atcacgcttc tccgagatta tgtctcaagc ggaagctttt ccaatgagat accactcttg 120
 cgtcagtcta cgatccccgt ctccgatgcg caaagatttg tcttggtgga gctcaccaac 180

caggggsrrg actcgrtyac ggccgccatc gacgttacca atsyktacgt cgtggcttac	240
caagcaggcg accaatccta ctttttgccg gacgcaccac gcggcgcgga aacgcacctc	300
ttcaccggca ccacccgant cctctctccc attcamyga agctacmcyg atctggagcg	360
atacgccgga catagggacc agatccctct cggtatagas caactcattc aatccgtcwc	420
kgcgcttcgt twyccgggcg gcagcacgcg trcycaagct cgttcgattt taatcctcat	480
tcagatgata tccgaggccg ccagattcaa tcccatctta tggaggkmyc gccaakayat	540
taacagtggg gmrtcatttc tgccagacrt gtacatgctg gagctggaga cgagtgggg	600
ccaacaatcc acgcaagtc agcattcaac cgatggcggt ttaataaacc cawtycggtt	660
ggctataycy mcyggtaact tcgtgacgtt gwcyaatgtt cgckmygtga tgcgcagctt	720
ggcgatcatg ttgtttgtat gcggagagcg gccatcttc tctgacgtgc gctattggcc	780
gctggtcata cgaccctga tagccgatga tgttacctgc agtgcttcgg aacctacggt	840
gcggattgtg ggtcgaaatg gcatgygcgt ggacgtccga gatgacgatt tccacgatgg	900
gaatcagata cagttgtggc cctccaagtc caacaatgat ccgaatcagt tgtggacgat	960
caaaagggat rrmaccattc gatccaatgg cagctgcttg accacgtatg gctatactgc	1020
tggcgctctat gtgatgatct tcgactgtaa tactgctgtg cgggaggcca ctatttggca	1080
gatatgggrc aatgggacca tcatcaatcc aagatccaat ctggtttttg cagcatcatc	1140
tggaatcaaa ggcactacgc ttacggtgca aacactggat tacacgttgg gacagggctg	1200
gcttgccggt aatgataccg cccacgcga ggtgaccata tatggtttca gggacctttg	1260
catggaatca aatsraggga gtgtgtgggt ggagacgtgc gwsagtagcc aamagaacca	1320
anaratgggc tttgtacggg gatggttcta tacgccccaa acaaaacca gaccaatgcc	1380
tcacckbtgg gagagactcc gtttcaacag taatcaatat agttagctgc agcgswgswt	1440
cgkskkskca gcgatgggtg tttaccaatg aakrsgccat tttgaattta aagavwrgsy	1500
ygrysrtyga tgtggcgcaa gcaaatccaa agctccgccc aataattatc tatcctgcca	1560
caggaaaacc aaatcaaatg tggttcccg tgyymtga	1598

<210>	13
<211>	763
<212>	DNA
<213>	Artificial
<220>	
<223>	MLA
<220>	
<221>	misc_feature
<222>	319
<223>	product= "n is gat aga or missing" /label= z1

<400> 13

tacgagagggc taagactcag agttacgcat caaaccacgg gcgakaata cttccgggttc 60

atcacgcttc tccgagatta tgtctcaagc ggaagctttt ccaatgagat accactcttg 120

cgtcagtcta cgatccccgt ctccgatgcg caaagatttg tcttggtgga gctcaccaac 180

caggggsrrg actcgrtyac ggccgccatc gacgttacca atsyktacgt cgtggcttac 240

caagcaggcg accaatccta ctttttgccg gacgcaccac gcggcgcgga aacgcacctc 300

ttcaccggca ccacccgant cctctctccc attcamyga agctacmcyg atctggagcg 360

atagcccgga catagggacc agatccctct cggtatagas caactcattc aatccgtcwc 420

kcgcttctgt twyccgggcg gcagcacgcg tcycaagct cgttcgattt taatcctcat 480

tcagatgatc tccgaggccg ccagattcaa tcccatctta tggaggkmyc gccaaayat 540

taacagtggg gmrtcatttc tgccagacrt gtacatgctg gagctggaga cgagttgggg 600

ccaacaatcc acgcaagtcc agcattcaac cgatggcggtt tttaataacc cawtycggtt 660

ggctataycy mcyygtaact tcgtgacgtt gwcyaatgtt cgckmygtga tcgccagctt 720

ggcgatcatg ttgtttgtat gcggagagcg gccatcttcc tct 763

<210> 14
 <211> 793
 <212> DNA
 <213> Artificial

<220>
 <223> MLB

<220>
 <221> misc_feature
 <222> 517
 <223> product= "n is ggc or missing"
 /label= Z2

<400> 14

gatgatgtta cctgcagtgc ttcggaacct acggtgcgga ttgtgggtcg aartggcatg 60

ygcgaggacg tccgagatga cgatttccac gatgggaatc agatacagtt gtggccctcc 120

aagtccaaca atgatccgaa tcagttgtgg acgatcaaaa gggatrrmac cattcgatcc 180

aatggcagct gcttgaccac gtatggctat actgctggcg tctatgtgat gatcttcgac 240

tgtaataactg ctgtgcggga ggccactatt tggcagatat gggrraatgg gaccatcatc 300

aatccaagat ccaatctggt tttggcagca tcactctggaa tcaaaggcac tacgcttacg 360

gtgcaaacac tggattacac gttgggacag ggctggcttg ccgtaatga taccgcccc 420

cgcgaggtga ccatatatgg tttcaggac ctttgcagtg aatcaaatsr agggagtgtg 480

tgggtggaga cgtgcgwsag tagccaamag aaccaanara tgggctttgt acggggatgg 540

ttctatacgc	cccaaacaaa	accaagacca	atgcctcacc	kbtagggagag	actccgtttc	600
aacagtaatc	aatatagtta	gctgcagcgs	wgswtcgksk	kskcagcgat	gggtgtttac	660
caatgaakrs	gccattttga	atttaaagav	wrgsyygrys	rtggatgtgg	cggaagcaaa	720
tccaaagctc	cgccgaataa	ttatctatcc	tgccacagga	aaaccaaatac	aaatgtggct	780
tcccgtgyym	tga					793

<210> 15
 <211> 1596
 <212> DNA
 <213> Artificial

<220>
 <223> MLA-I

<400> 15

tacgagaggc	taagactcag	agttacgcat	caaaccacgg	gcgaggaata	cttccggttc	60
atcacgcttc	tccgagatta	tgtctcaagc	ggaagctttt	ccaatgagat	accactcttg	120
cgtcagtcta	cgatccccgt	ctccgatgcg	caaagatttg	tcttggtgga	gctcaccaac	180
caggggggag	actcgatcac	ggccgccatc	gacgttacca	atctgtacgt	cgtggcttac	240
caagcaggcg	accaatccta	ctttttgcgc	gacgcaccac	gcggcgcgga	aacgcacctc	300
ttcacgggca	ccaccgatac	ctctctccca	ttcaacggaa	gctaccctga	tctggagcga	360
tacgccggac	atagggacca	gatccctctc	ggtatagacc	aactcattca	atccgtcacg	420
gcgcttcggt	ttccgggcgg	cagcacgcgt	acccaagctc	gttcgatttt	aatcctcatt	480
cagatgatct	ccgaggccgc	cagattcaat	cccattcttat	ggagggctcg	ccaatacatt	540
aacagtgggg	cgtcattttc	gccagacgtg	tacatgctgg	agctggagac	gagttggggc	600
caacaatcca	cgcaagtcca	gcattcaacc	gatggcgttt	ttaataacct	aattcggttg	660
gctatacccc	ccggtaactt	cgtgacgttg	accaatgttc	gcgacgtgat	cgccagcttg	720
gcgatcatgt	tgtttgatg	cggagagcgg	ccatcttcct	ctgacgtgcg	ctattggccg	780
ctggtcatac	gaccggtgat	agccgatgat	gttacctgca	gtgcttcgga	acctacggtg	840
cggattgtgg	gtcgaaatgg	catgtgcgtg	gacgtccgag	atgacgattt	ccacgatggg	900
aatcagatac	agttgtggcc	ctccaagtcc	aacaatgatac	cgaatcagtt	gtggacgatac	960
aaaagggatg	gaaccattcg	atccaatggc	agctgcttga	ccacgtatgg	ctatactgct	1020
ggcgtctatg	tgatgatctt	cgactgtaat	actgctgtgc	gggaggccac	tatttggcag	1080
atatggggca	atgggaccat	catcaatcca	agatccaatac	tggttttggc	agcatcatct	1140
ggaatcaaag	gcactacgct	tacgggtgca	acactggatt	acacgttggg	acagggctgg	1200
cttgccggta	atgataccgc	cccacgcgag	gtgaccatat	atggtttcag	ggacctttgc	1260

atggaatcaa atggagggag tgtgtgggtg gagacgtgcg tgagtagcca acagaaccaa	1320
agatgggctt tgtacgggga tggttctata cgccccaaac aaaaccaaga ccaatgcctc	1380
acctgtggga gagactccgt ttcaacagta atcaatatag ttagctgcag cgtgggatcg	1440
tctgggcagc gatgggtgtt taccaatgaa ggggccattt tgaatttaaa gaatgggttg	1500
gccatggatg tggcgcaagc aaatccaaag ctccgccgaa taattatcga tcttgccaca	1560
ggaaaaccaa atcaaattgtg gcttcccggtg ccatga	1596

<210> 16
 <211> 762
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin A1

<400> 16

tacgagaggc taagactcag agttacgcat caaaccacgg gcgaggaata cttccggttc	60
atcacgcttc tccgagatta tgtctcaagc ggaagctttt ccaatgagat accactcttg	120
cgtcagtcta cgatccccgt ctccgatgcg caaagatttg tcttgggtgga gctcaccaac	180
caggggcagg actcgggttac ggccgccatc gacgttacca atgcttacgt cgtggcttac	240
caagcaggcg accaatccta ctttttgccg gacgcaccac gcggcgcgga aacgcacctc	300
ttcacgggca ccaccgatc ctctctccca ttcaacggaa gctaccctga tctggagcga	360

tacgccggac atagggacca gatccctctc ggtatagacc aactcattca atccgtcacg	420
gcgcttcggt ttccggggcg cagcacgcgt acccaagctc gttcgatttt aatcctcatt	480
cagatgatct ccgaggccgc cagattcaat cccatcttat ggaggtaccg ccaatacatt	540
aacagtgggg cgtcatttct gccagacgtg tacatgctgg agctggagac gagttggggc	600
caacaatcca cgcaagtcca gcattcaacc gatggcgttt ttaataacct aattcggttg	660
gctatacccc ccggttaact cgtgacgttg accaatgttc gcgacgtgat cgccagcttg	720
gcgatcatgt tgtttgatg cggagagcgg ccattcttct ct	762

<210> 17
 <211> 768
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin A2

<400> 17

tacgagaggc taagactcag agttacgcat caaaccacgg gcgatgaata cttccggttc	60
atcacgcttc tccgagatta tgtctcaagc ggaagctttt ccaatgagat accactcttg	120

cgtcagtcta	cgatccccgt	ctccgatgcg	caaagatttg	tcttggtgga	gctcaccaac	180
caggggcagg	actcgatcac	ggccgccatc	gacgttacca	atgcttacgt	cgtggcttac	240
caagcaggcg	accaatccta	ctttttgcmc	gacgcaccac	gcggcgcgga	aacgcacctc	300
ttcaccggca	ccacccgaga	tagatcctct	ctccattca	ctggaagcta	caccgatctg	360
gagcgatacg	cggacatag	ggaccagatc	cctctcggtg	tagagcaact	cattcaatcc	420
gtctctgcmc	ttcggtaccc	gggcggcagc	acgcgtgctc	aagctcgctc	gattttaatc	480
ctcattcaga	tgatctccga	ggccgccaga	ttcaatccca	tcttatggag	gtaccgcaa	540
gatattaaca	gtggggaatc	atttctgccg	gacatgtaca	tgctggagct	ggagacgagt	600
tggggccaac	aatccacgca	agtcacgcat	tcaaccgatg	gcgtttttaa	taaccattc	660
cggttggcta	tatctactgg	taacttcgtg	acgttgctca	atgttcgctc	tgtgatcgcc	720
agcttggcga	tcatgttggt	tgtatgcgga	gagcgcccat	cttcctct		768

<210>	18
<211>	1596
<212>	DNA
<213>	Artificial
<220>	
<223>	MLI (matched)
<400>	18

tatgaaagat	tgagggttgag	ggtagctcac	cagactacag	gagaagagta	ttttagattt	60
attactttgt	tgagggatta	cgtagttct	ggttctttca	gtaacgaaat	tcctttgctt	120
agacaatcta	ctattccagt	ttctgatgct	cagcgtttcg	ttcttggtga	attgactaac	180
caaggagggtg	atagtattac	tgctgctatt	gatgtgacta	acctttatgt	tgttgcatat	240
caggctgggtg	atcagtctta	tttccttagg	gatgctccta	gaggagctga	gactcatttg	300
tttactggta	caacacggag	ttctttgcct	tttaacgggt	cttatccaga	cttggaaga	360
tatgctgggc	acagagatca	aattccattg	ggaattgatc	agttgatcca	gagtgttact	420
gctttgagat	tcccagggtg	atctactaga	acacaggcaa	gatctatcct	tattttgatc	480
caaatgatta	gtgaagctgc	taggtttaac	cctattcttt	ggagagcaag	acagtatata	540
aactctgggtg	cttctttcct	tcctgatggt	tatatgcttg	aacttgaaac	ttcatgggga	600
cagcagtcta	ctcagggttca	acacagtaca	gacgggtgtg	tcaacaatcc	tatcagactt	660
gcaattccac	ctggaaatct	tggtactctt	acaaacgtga	gagatgttat	tgcttctctt	720
gotattatgc	ttttcgtttg	tggtgaaaga	ccttctagtt	ctgatgttag	atactggcca	780
ttgggtatta	ggcctgttat	cgctgacgat	gtgacatggt	ctgcatctga	accaactggt	840
aggatcggtg	gaagaaacgg	tatgtgtggt	gatgttcggg	acgatgactt	tcatgacggg	900

aaccaaatecc aactttggcc tagtaagtct aataacgacc caaaccaact ttggactatt	960
aagagagacg gtacaatcag gtctaacgga tcttgtctta ctacatacgg ttacactgca	1020
ggagtttacg ttatgatttt tgattgcaac acagcagtta gagaagctac aatctggcaa	1080
atctggggta acggaactat tattaaccct cgttctaact tgggtgcttg tgettctagt	1140
ggtattaagg gaacaacttt gactgttcag actttggact atactcttgg tcaaggatgg	1200
ttggctggaa acgacacagc tcctagagaa gttacaatct acggatttag agatttgtgt	1260
atggagtcta acggtggatc tgtttgggtt gaaacttgtg tttcatctca gcaaaatcag	1320
aggtgggcac tttatggtga cgggaagtatc agacctaagc agaatcagga tcagtgtttg	1380
acatgcggta gggatagtgt gtctactgtt attaacattg tgtcttggtc tgcaggtagt	1440
tctggacaaa ggtgggtttt cacaaacgag ggtgctatcc ttaacttgaa gaacggtcct	1500
gctatggatg ttgctcaggc taaccctaag ttgagaagga ttatcattta cccagctact	1560
ggtaagccta accagatgtg gttgccagtt ccttat	1596

<210>	19
<211>	762
<212>	DNA
<213>	Artificial
<220>	
<223>	mistletoe lectin A1
<400>	19

tatgaaagat tgagggtgag ggtgactcac cagactacag gagaagagta ttttagattt	60
attactttgt tgagggatta cgtagttct ggttctttca gtaacgaaat tcctttgctt	120
agacaatcta ctattccagt ttctgatgct cagcgtttcg ttcttggtga attgactaac	180
caaggacagg atagtgttac tgctgctatt gatgtgacta acgcttatgt tgttgcatat	240
caggctggtg atcagttcta ttctcttagg gatgctccta gaggagctga gactcatttg	300
tttactggta caacacggag ttctttgcct tttaacgggt cttatccaga cttggaaaga	360
tatgctggtc acagagatca aattccattg ggaattgatc agttgatcca gagtgttact	420
gctttgagat tcccagggtg atctactaga acacaggcaa gatctatcct tattttgatc	480
caaatgatta gtgaagctgc taggtttaac cctattcttt ggagatacag acagtataac	540
aactctggtg cttctttcct tcctgatgtt tatatgcttg aacttgaaac ttcattgggga	600
cagcagtcta ctcagtttca acacagtaca gacggtgtgt tcaacaatcc tatcagactt	660
gcaattccac ctggaaattt tgttactctt acaaacgtga gagatgttat tgcttctctt	720
gctattatgc ttttcggttg tggtgaaaga ccttctagtt ct	762

<210>	20
-------	----

<211> 768
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin A2

<400> 20

tatgaaagat	tgagggtgag	ggtgactcac	cagactacag	gagatgagta	ttttagattt	60
attactttgt	tgagggatta	cgtagttct	ggttctttca	gtaacgaaat	tcctttgctt	120
agacaatcta	ctattccagt	ttctgatgct	cagcgtttcg	ttcttgttga	attgactaac	180
caaggacagg	atagtattac	tgctgctatt	gatgtgacta	acgcttatgt	tggtgcatat	240
caggctggtg	atcagtctta	tttccttagg	gatgctccta	gaggagctga	gactcatttg	300
tttactggta	caacacggga	tagaagttct	ttgcctttta	ctggttctta	tacagacttg	360
gaaagatatg	ctgggtcacag	agatcaaatt	ccattgggaa	ttgagcagtt	gatccagagt	420
gtttctgctt	tgagataccc	aggtggatct	actagagctc	aggcaagatc	tatccttatt	480
ttgatccaaa	tgattagtga	agctgctagg	tttaacctta	ttctttggag	atacagacag	540
gatatcaact	ctgggtgaatc	tttccttctt	gatattgtata	tgcttgaact	tgaaacttca	600
tggggacagc	agtctactca	ggttcaacac	agtacagacg	gtgtgttcaa	caatcctttc	660
agacttgcaa	tttctactgg	aaattttgtt	actctttcta	acgtgagatc	tgttattgct	720
tctcttgcta	ttatgctttt	cgtttggtgt	gaaagacctt	ctagttct		768

<210> 21
 <211> 792
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B

<400> 21

gatgatgtta	cctgcagtg	ttcggaacct	acggtgcgga	ttgtgggtcg	aaatggcatg	60
tgcgtggacg	tccgagatga	cgattttccac	gatgggaatc	agatacagtt	gtggccctcc	120
aagtccaaca	atgatccgaa	tcagttgtgg	acgatcaaaa	gggatggaac	cattcgatcc	180
aatggcagct	gcttgaccac	gtatggctat	actgctggcg	tctatgtgat	gatcttcgac	240
tgtaatactg	ctgtgcggga	ggccactatt	tggcagatat	ggggcaatgg	gaccatcatc	300
aatccaagat	ccaatctggg	tttggcagca	tcactctggaa	tcaaaggcac	tacgcttacg	360
gtgcaaacac	tggattacac	gttgggacag	ggctggcttg	ccggtaatga	taccgcccc	420
cgcgaggtga	ccatatatgg	tttcaggggac	ctttgcatgg	aatcaaattg	agggagtgtg	480
tgggtggaga	cgtgcgtgag	tagccaacag	aaccaaagat	gggctttgta	cggggatggt	540

tctatacgcc ccaaacaaaa ccaagaccaa tgcctcacct gtgggagaga ctccgtttca	600
acagtaatca atatagttag ctgcagcgct ggatcgctctg ggcagcgatg ggtgtttacc	660
aatgaagggg ccattttgaa tttaaagaat gggttggcca tggatgtggc gcaagcaa	720
ccaaagctcc gccgaataat tatctatcct gccacaggaa aaccaaataa aatgtggctt	780
cccgtgccat ga	792

<210>	22
<211>	795
<212>	DNA
<213>	Artificial
<220>	
<223>	mistletoe lectin B1
<400>	22

gatgatgtta cctgcagtgc ttcggaacct acggtgcgga ttgtgggtcg aaatggcatg	60
cgcgtggacg tccgagatga cgattttccac gatgggaatc agatacagtt gtggccctcc	120
aagtccaaca atgatccgaa tcagttgtgg acgatcaaaa gggatggaac cattcgatcc	180
aatggcagct gcttgaccac gtatggctat actgctggcg tctatgtgat gatcttcgac	240
tgttaatactg ctgtgcggga ggccactatt tggcagatat gggacaatgg gaccatcatc	300
aatccaagat ccaatctggg tttggcagca tcatctggaa tcaaaggcac tacgcttacg	360
gtgcaaacac tggattacac gttgggacag ggctggcttg ccggaatga taccgcccc	420

cgcgaggtga ccatatatgg tttcagggac ctttgcattg aatcaaattg agggagtgtg	480
tgggtggaga cgtgcgacag tagccaaaag aaccaaggca aatgggcttt gtacggggat	540
ggttctatac gccccaaaca aaaccaagac caatgcttca cctctgggag agactccgtt	600
tcaacagtaa tcaatatagt tagctgcagc ggagcttcgg ggtctcagcg atgggtgttt	660
accaatgaag gggccatttt gaatttaaag aatgggttgg ccatggatgt ggcgcaagca	720
aatccaaagc tccgcggaat aattatctat cctgccacag gaaaacaaa tcaaatgtgg	780
cttcccgtgt tctga	795

<210>	23
<211>	795
<212>	DNA
<213>	Artificial
<220>	
<223>	mistletoe lectin B2
<400>	23

gatgatgtta cctgcagtgc ttcggaacct acggtgcgga ttgtgggtcg aatggcatg	60
cgcgtggacg tccgagatga cgattttccac gatgggaatc agatacagtt gtggccctcc	120

aagtccaaca atgatccgaa tcagttgtgg acgatcaaaa gggataaacac cattcgatcc	180
aatggcagct gcttgaccac gtatggctat actgctggcg tctatgtgat gatcttcgac	240
tgtaataactg ctgtgcggga ggccactatt tggcagatat gggacaatgg gaccatcatc	300
aatccaagat ccaatctggt tttggcagca tcatctggaa tcaaaggcac tacgcttacg	360
gtgcaaacac tggattacac gttgggacag ggctggcttg ccggtaatga taccgcccc	420
cgcgaggtga ccatatatgg tttcagggac ctttgcattg aatcaaatca agggagtgtg	480
tgggtggaga cgtgcgacag tagccaaaag aaccaaggca aatgggcttt gtacggggat	540
ggttctatac gccccaaaca aaaccaagac caatgcctca ccgttgggag agactccgtt	600
tcaacagtaa tcaatatagt tagctgcagc ggagcttcgg ggtctcagcg atgggtgttt	660
accaatgaat acgccatttt gaatttaaag agtgggttgg ccatggatgt ggcgcaagca	720
aatccaaagc tccgccgaat aattatctat cctgccacag gaaaaccaa tcaaatgtgg	780
cttcccgtgt tctga	795

<210>	24
<211>	795
<212>	DNA
<213>	Artificial
<220>	
<223>	mistletoe lectin B3
<400>	24

gatgatgtta cctgcagtgc ttcggaaacct acggtgcgga ttgtgggtcg aaatggcatg	60
cgcgaggagc tccgagatga cgatttccac gatgggaatc agatacagtt gtggccctcc	120
aagtccaaca atgatccgaa tcagttgtgg acgatcaaaa gggatggaac cattcgatcc	180
aatggcagct gcttgaccac gtatggctat actgctggcg tctatgtgat gatcttcgac	240
tgtaataactg ctgtgcggga ggccactatt tggcagatat gggacaatgg gaccatcatc	300
aatccaagat ccaatctggt tttggcagca tcatctggaa tcaaaggcac tacgcttacg	360
gtgcaaacac tggattacac gttgggacag ggctggcttg ccggtaatga taccgcccc	420
cgcgaggtga ccatatatgg tttcagggac ctttgcattg aatcaaatgg agggagtgtg	480
tgggtggaga cgtgcgacag tagccaaaag aaccaaggca aatgggcttt gtacggggat	540
ggttctatac gccccaaaca aaaccaagac caatgcctca cctctgggag agactccgtt	600
tcaacagtaa tcaatatagt tagctgcagc ggagcttcgg ggtctcagcg atgggtgttt	660
accaatgaag gggccatttt gaatttaaag actgggttgg ccatggatgt ggcgcaagca	720
aatccaaagc tccgccgaat aattatctat cctgccacag gaaaaccaa tcaaatgtgg	780
cttcccgtgt tctga	795

<210> 25
 <211> 795
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B4

<400> 25

gatgatgtta cctgcagtgc ttcggaacct acggtgcgga ttgtgggtcg aaatggcatg	60
cgcgtggacg tccgagatga cgatttccac gatgggaatc agatacagtt gtggccctcc	120
aagtccaaca atgatccgaa tcagttgtgg acgatcaaaa gggatggaac cattcgatcc	180
aatggcagct gcttgaccac gtatggctat actgctggcg tctatgtgat gatcttcgac	240
tgttaactctg ctgtgcggga ggccactatt tggcagatat gggacaatgg gaccatcatc	300
aatccaagat ccaatctggt ttggcagca tcatctggaa tcaaaggcac tacgcttacg	360
gtgcaaacac tggattacac gttgggacag ggctggcttg ccggtaatga taccgcccc	420
cgcgaggtga ccatatatgg ttccaggac ctctgcatgg aatcaaatgg agggagtgtg	480
tgggtggaga cgtgcgacag tagccaaaag aaccaaggca aatgggcttt gtacggggat	540
ggttctatac gccccaaaca aaaccaagac caatgcctca cctctgggag agactccgtt	600
tcaacagtaa tcaatatagt tagctgcagc ggagcttcgg ggtctcagcg atgggtgttt	660
accaatgaag gggccatttt gaatttaaag aaagggccgg ccatggatgt ggcgcaagca	720
aatccaaagc tccgcgaat aattatctat cctgccacag gaaaaceaaa tcaaatgtgg	780
cttcccgtgt tctga	795

<210> 26
 <211> 795
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B5

<400> 26

gatgatgtta cctgcagtgc ttcggaacct acggtgcgga ttgtgggtcg aaatggcatg	60
cgcgtggacg tccgagatga cgatttccac gatgggaatc agatacagtt gtggccctcc	120
aagtccaaca atgatccgaa tcagttgtgg acgatcaaaa gggatggaac cattcgatcc	180
aatggcagct gcttgaccac gtatggctat actgctggcg tctatgtgat gatcttcgac	240
tgttaactctg ctgtgcggga ggccactatt tggcagatat gggacaatgg gaccatcatc	300
aatccaagat ccaatctggt ttggcagca tcatctggaa tcaaaggcac tacgcttacg	360
gtgcaaacac tggattacac gttgggacag ggctggcttg ccggtaatga taccgcccc	420

cgcgagggtga ccatatatgg tttcagggac ctttgcattgg aatcaaatgg agggagtgtg	480
tgggtggaga cgtgcgacag tagccaaaag aaccaaggca aatgggcttt gtacggggat	540
ggttctatac gccccaaaca aaaccaagac caatgcctca cctctgggag agactccgtt	600
tcaacagtaa tcaatatagt tagctgcagc ggagcttcgg ggtctcagcg atgggtgttt	660
accaatgaag gggccatttt gaatttaaag aatagcttga tgggtggatgt ggcgcaagca	720
aatccaaagc tccgcgaat aattatctat cctgccacag gaaaaccaa tcaaattgtg	780
cttcccgtgt tctga	795

<210> 27
 <211> 792
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B

<400> 27

gacgatgtga catgttctgc atctgaacca actgttagga tcgttgggaag aaacggtatg	60
tgtgttgatg ttccgggacga tgactttcat gacggtaacc aaatccaact ttggcctagt	120
aagtctaata acgacccaaa ccaactttgg actattaaga gagacggtac aatcaggctc	180
aacggatctt gtcttactac atacgggtac actgcaggag ttacgttat gatttttgat	240
tgcaacacag cagttagaga agctacaatc tggcaaatct ggggtaacgg aactattatt	300

aaccctcggt ctaacttggg gcttgctgct tctagtggta ttaagggaac aactttgact	360
gttcagactt tggactatac tcttgggtcaa ggatgggttg ctggaaacga cacagctcct	420
agagaagtta caatctacgg atttagagat ttgtgtatgg agtctaacgg tggatctgtt	480
tgggttgaaa cttgtgtttc atctcagcaa aatcagaggt gggcacttta tgggtgacgga	540
agtatcagac ctaagcagaa tcaggatcag tgtttgacat gcggtaggga tagtgtgtct	600
actgttatta acattgtgtc ttgttctgca ggtagttctg gacaaagggtg ggttttcaca	660
aacgaggggtg ctatccttaa cttgaagaac ggtcttgcta tggatgttgc tcaggctaac	720
cctaagttga gaaggattat catttaccga gctactggta agcctaacca gatgtgggtg	780
ccagttcctt at	792

<210> 28
 <211> 795
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin 1 (match)

<400> 28

gacgatgtga catgttctgc atctgaacca actgttagga tcgttggaag aaacggtagt	60
cgtgttgatg ttcgggacga tgactttcat gacggtaacc aaatccaact ttggcctagt	120
aagtctaata acgacccaaa ccaactttgg actattaaga gagacggtac aatcaggtct	180
aacggatctt gtcttactac atacgggtac actgcaggag tttacgttat gatttttgat	240
tgcaacacag cagttagaga agctacaatc tggcaaactc gggataacgg aactattatt	300
aaccctcggt ctaacttggg gcttgctgct tctagtggta ttaagggaac aactttgact	360
gttcagactt tggactatac tcttgggtcaa ggatggttgg ctggaaacga cacagctcct	420
agagaagtta caatctacgg atttagagat ttgtgtatgg agtctaacgg tggatctgtt	480
tgggttgaaa cttgtgattc atctcagaaa aatcagggca agtgggcact ttatggtgac	540
ggaagtatca gacctaaagca gaatcaggat cagtgttga catccggtag ggatagtgtg	600
tctactgtta ttaacattgt gtcttgttct ggagctagtg gatctcaaag gtgggttttc	660
acaaacgagg gtgctatcct taacttgaag aacggctctg ctatggatgt tgctcaggct	720
aaccctaagt tgagaaggat tatcatttac ccagctactg gtaagcctaa ccagatgtgg	780
ttgccagttt tttat	795

<210>	29
<211>	795
<212>	DNA
<213>	Artificial

<220>	
<223>	mistletoe lectin B2 (match)
<400>	29

gacgatgtga catgttctgc atctgaacca actgttagga tcgttggaag aagcggtagt	60
cgtgttgatg ttcgggacga tgactttcat gacggtaacc aaatccaact ttggcctagt	120
aagtctaata acgacccaaa ccaactttgg actattaaga gagacaatac aatcaggtct	180
aacggatctt gtcttactac atacgggtac actgcaggag tttacgttat gatttttgat	240
tgcaacacag cagttagaga agctacaatc tggcaaactc gggataacgg aactattatt	300
aaccctcggt ctaacttggg gcttgctgct tctagtggta ttaagggaac aactttgact	360
gttcagactt tggactatac tcttgggtcaa ggatggttgg ctggaaacga cacagctcct	420
agagaagtta caatctacgg atttagagat ttgtgtatgg agtctaacca gggatctgtt	480
tgggttgaaa cttgtgattc atctcagaaa aatcagggca agtgggcact ttatggtgac	540
ggaagtatca gacctaaagca gaatcaggat cagtgttga cagtcggtag ggatagtgtg	600
tctactgtta ttaacattgt gtcttgttct ggagctagtg gatctcaaag gtgggttttc	660
acaaacgagt atgctatcct taacttgaag tccggctctg ctatggatgt tgctcaggct	720

aaccctaagt tgagaaggat tatcatttac ccagctactg gtaagcctaa ccagatgtgg 780
 ttgccagttt tttat 795

<210> 30
 <211> 795
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B3 (match)

<400> 30

gacgatgtga catgttctgc atctgaacca actgtagga tcgttggaag aaacggtag 60
 cgtgttgatg ttccggacga tgactttcat gacggtaacc aaatccaact ttggcctagt 120
 aagtctaata acgacccaaa ccaactttgg actattaaga gagacggtag aatcaggtct 180
 aacggatctt gtcttactac atacggttac actgcaggag tttagcttat gatttttgat 240
 tgcaacacag cagttagaga agctacaatc tggcaaatct gggataacgg aactattatt 300
 aaccctcggt ctaacttggg gcttgcgtgt tctagtggta ttaagggaac aactttgact 360
 gttcagactt tggactatac tcttgggtcaa ggatggttgg ctggaaacga cacagctcct 420
 agagaagtta caatctacgg atttagagat ttgtgtatgg agtctaacgg tggatctgtt 480
 tgggttgaaa cttgtgattc atctcagaaa aatcagggca agtgggcact ttatggtgac 540
 ggaagtatca gacctaagca gaatcaggat cagtgtttga catccggtag ggatagtgtg 600

tctactgtta ttaacattgt gtcttgttct ggagctagtg gatctcaaag gtgggttttc 660
 acaaacgagg gtgctatcct taacttgaag accggtcttg ctatggatgt tgctcaggct 720
 aaccctaagt tgagaaggat tatcatttac ccagctactg gtaagcctaa ccagatgtgg 780
 ttgccagttt tttat 795

<210> 31
 <211> 795
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B4 (match)

<400> 31

gacgatgtga catgttctgc atctgaacca actgtagga tcgttggaag aaacggtag 60
 cgtgttgatg ttccggacga tgactttcat gacggtaacc aaatccaact ttggcctagt 120
 aagtctaata acgacccaaa ccaactttgg actattaaga gagacggtag aatcaggtct 180
 aacggatctt gtcttactac atacggttac actgcaggag tttagcttat gatttttgat 240
 tgcaacacag cagttagaga agctacaatc tggcaaatct gggataacgg aactattatt 300

aaccctcggt	ctaacttggg	gcttgctgct	tctagtggta	ttaagggaac	aactttgact	360
gttcagactt	tggactatac	tcttgggtcaa	ggatgggttg	ctggaaacga	cacagctcct	420
agagaagtta	caatctacgg	atttagagat	ttgtgtatgg	agtctaacgg	tggatctggt	480
tgggttgaaa	cttgtgattc	atctcagaaa	aatcagggca	agtgggcact	ttatggtgac	540
ggaagtatca	gacctaagca	gaatcaggat	cagtgtttga	catccggtag	ggatagtgtg	600
tctactgtta	ttaacattgt	gtcttgttct	ggagctagtg	gatctcaaag	gtgggttttc	660
acaaacgagg	gtgctatcct	taacttgaag	aaaggtcctg	ctatggatgt	tgctcaggct	720
aaccctaagt	tgagaaggat	tatcatttac	ccagctactg	gtaagcctaa	ccagatgtgg	780
ttgccagttt	tttat					795

<210> 32
 <211> 795
 <212> DNA
 <213> Artificial

<220>
 <223> mistletoe lectin B5 (match)
 <400> 32

gacgatgtga	catgttctgc	atctgaacca	actgttagga	tcgttggaag	aaacggtatg	60
cgtgttgatg	ttcgggacga	tgactttcat	gacggtaacc	aaatccaact	ttggcctagt	120
aagtctaata	acgacccaaa	ccaactttgg	actattaaga	gagacggtac	aatcaggtct	180
aacggatcct	gtcttactac	atacgggttac	actgcaggag	tttacgttat	gatttttgat	240
tgcaacacag	cagttagaga	agctacaatc	tggcaaactc	gggataacgg	aactattatt	300
aaccctcggt	ctaacttggg	gcttgctgct	tctagtggta	ttaagggaac	aactttgact	360
gttcagactt	tggactatac	tcttgggtcaa	ggatgggttg	ctggaaacga	cacagctcct	420
agagaagtta	caatctacgg	atttagagat	ttgtgtatgg	agtctaacgg	tggatctggt	480
tgggttgaaa	cttgtgattc	atctcagaaa	aatcagggca	agtgggcact	ttatggtgac	540
ggaagtatca	gacctaagca	gaatcaggat	cagtgtttga	catccggtag	ggatagtgtg	600
tctactgtta	ttaacattgt	gtcttgttct	ggagctagtg	gatctcaaag	gtgggttttc	660
acaaacgagg	gtgctatcct	taacttgaag	aactctctta	tggatggatgt	tgctcaggct	720
aaccctaagt	tgagaaggat	tatcatttac	ccagctactg	gtaagcctaa	ccagatgtgg	780
ttgccagttt	tttat					795

<210> 33
 <211> 20
 <212> DNA
 <213> Artificial

<220>
<221>
<222>
<223> primer

<400> 33

gtnmgngayg aygayttyca

20

<210> 34

<211> 20
<212> DNA
<213> Artificial

<220>
<221>
<222>
<223> primer

<400> 34

atytgrttng gyttncngt

20

<210> 35
<211> 21
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 35

cacagcagta ttacagtcga a

21

<210> 36
<211> 24
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 36

gtctatgtga tgatcttcga ctgt

24

<210> 37
<211> 254
<212> PRT
<213> Artificial

<220>

<223> mistletoe lectin A1

<400> 37

Tyr Glu Arg Leu Arg Leu Arg Val Thr His Gln Thr Thr Gly Glu Glu
1 5 10 15
Tyr Phe Arg Phe Ile Thr Leu Leu Arg Asp Tyr Val Ser Ser Gly Ser
20 25 30
Phe Ser Asn Glu Ile Pro Leu Leu Arg Gln Ser Thr Ile Pro Val Ser
35 40 45
Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gln Asp
50 55 60
Ser Val Thr Ala Ala Ile Asp Val Thr Asn Ala Tyr Val Val Ala Tyr
65 70 75 80
Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly Ala
85 90 95
Glu Thr His Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro Phe Asn
100 105 110
Gly Ser Tyr Pro Asp Leu Glu Arg Tyr Ala Gly His Arg Asp Gln Ile
115 120 125
Pro Leu Gly Ile Asp Gln Leu Ile Gln Ser Val Thr Ala Leu Arg Phe
130 135 140
Pro Gly Gly Ser Thr Arg Thr Gln Ala Arg Ser Ile Leu Ile Leu Ile
145 150 155 160
Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg Tyr
165 170 175
Arg Gln Tyr Ile Asn Ser Gly Ala Ser Phe Leu Pro Asp Val Tyr Met
180 185 190
Leu Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln His
195 200 205
Ser Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Ala Ile Pro Pro
210 215 220
Gly Asn Phe Val Thr Leu Thr Asn Val Arg Asp Val Ile Ala Ser Leu
225 230 235 240
Ala Ile Met Leu Phe Val Cys Gly Glu Arg Pro Ser Ser Ser
245 250

<210> 38

<211> 256

<212> PRT

<213> Artificial

<220>

<223> mistletoe lectin A2

<400> 38

Tyr Glu Arg Leu Arg Leu Arg Val Thr His Gln Thr Thr Gly Asp Glu
1 5 10 15

Tyr Phe Arg Phe Ile Thr Leu Leu Arg Asp Tyr Val Ser Ser Gly Ser
20 25 30

Phe Ser Asn Glu Ile Pro Leu Leu Arg Gln Ser Thr Ile Pro Val Ser
35 40 45

Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gln Asp
50 55 60

Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Ala Tyr Val Val Ala Tyr
65 70 75 80

Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly Ala
85 90 95

Glu Thr His Leu Phe Thr Gly Thr Thr Arg Asp Arg Ser Ser Leu Pro
100 105 110

Phe Thr Gly Ser Tyr Thr Asp Leu Glu Arg Tyr Ala Gly His Arg Asp
115 120 125

Gln Ile Pro Leu Gly Ile Glu Gln Leu Ile Gln Ser Val Ser Ala Leu
130 135 140

Arg Tyr Pro Gly Gly Ser Thr Arg Ala Gln Ala Arg Ser Ile Leu Ile
145 150 155 160

Leu Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp
165 170 175

Arg Tyr Arg Gln Asp Ile Asn Ser Gly Glu Ser Phe Leu Pro Asp Met
180 185 190

Tyr Met Leu Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val
195 200 205

Gln His Ser Thr Asp Gly Val Phe Asn Asn Pro Phe Arg Leu Ala Ile
210 215 220

Ser Thr Gly Asn Phe Val Thr Leu Ser Asn Val Arg Ser Val Ile Ala
225 230 235 240

Ser Leu Ala Ile Met Leu Phe Val Cys Gly Glu Arg Pro Ser Ser Ser
245 250 255

<210> 39

<211> 253

<212> PRT

<213> Artificial

<220>

<223> mistletoe lectin A1 (matched)

<400> 39

Tyr Glu Arg Leu Arg Leu Arg Val Thr His Gln Thr Thr Gly Glu Glu
1 5 10 15

Tyr Phe Arg Phe Ile Thr Leu Leu Arg Asp Tyr Val Ser Ser Gly Ser
20 25 30

Phe Ser Asn Glu Ile Pro Leu Leu Arg Gln Ser Thr Ile Pro Val Ser
35 40 45

Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gln Asp
50 55 60

Ser Val Thr Ala Ala Ile Asp Val Thr Asn Ala Tyr Val Val Ala Tyr
65 70 75 80

Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly Ala
85 90 95

Glu Thr His Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro Phe Asn
100 105 110

Gly Ser Tyr Pro Asp Leu Glu Arg Tyr Ala Gly His Arg Gln Ile Pro
115 120 125

Leu Gly Ile Asp Gln Leu Ile Gln Ser Val Thr Ala Leu Arg Phe Pro
130 135 140

Gly Gly Ser Thr Arg Thr Gln Ala Arg Ser Ile Leu Ile Leu Ile Gln
145 150 155 160

Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg Tyr Arg
165 170 175

Gln Tyr Ile Asn Ser Gly Ala Ser Phe Leu Pro Asp Val Tyr Met Leu
180 185 190

Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln His Ser
195 200 205

Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Ala Ile Pro Pro Gly
210 215 220

Asn Phe Val Thr Leu Thr Asn Val Arg Asp Val Ile Ala Ser Leu Ala
225 230 235 240

Ile Met Leu Phe Val Cys Gly Glu Arg Pro Ser Ser Ser
245 250